

Summary of Material. This course examines the main elements of *deductive logic*, one of the oldest and most important branches of philosophy, and which is primarily concerned with correctly deducing a *conclusion* from given *premises*, thus with what is often called *valid inference* or *argument*, or with what we will call *logical consequence* or ‘following logically from’. The key ideas are introduced using a special language, FOL, which abbreviates ‘first-order logic’. We develop this language first using a special case, where we have names for objects and then what we call *predicates* of those objects, corresponding to properties and simple relations. This gives rise to elementary sentences; we then look at some ways to connect them (with what we call *connectives*) to form more complex sentences. This yields what is often called (classical) *propositional logic*, an important part of logic expressed in a fragment of FOL. We give a precise definition of valid inference/logical consequence here; we then proceed to develop a proof system (a system of *deduction*) for this, i.e., a way of *deriving* logical consequences from given sentences as a starting point. Following this, we consider a more complex version of FOL, based on *quantifiers* and *variables*, which gives a correspondingly more complex means of expression, and along with this we expand to a correspondingly more complex system of *deduction*. We will also examine, even if only in a cursory way, the questions of the adequacy and effectiveness of the deductions systems.

The exposition in the lectures will follow that of the textbook, which means that *the textbook is indispensable*, and regular reading of it is **ESSENTIAL**. Examples are to be found in abundance in the textbook, and you should go through these as a matter of **routine**, *without being instructed to do so*. Formal logic is very much a subject where practice is essential and the exercises instill familiarity with the material. In addition to the lectures, there will be one conference hour per week: the main purpose of these conferences will be to work through selected examples; **attendance at conferences is therefore strongly recommended**, and proper preparation for the conferences requires prior practice of the relevant exercises. *Note that conference size is limited; please sign-up promptly to get the time you desire.*

Many students standardly find the second-half of the course much more difficult and complicated than the first part. Thus, finding the initial stages easy is not a sign that you will find the whole course so. Understanding the material is also by its nature cumulative; one cannot neglect the course for a few weeks, and then expect to understand the new material. **Handouts, assignments etc. will be distributed via WebCT; announcements will also be distributed through WebCT’s Announcement function; note that these are not sent to your normal e-mail address. Therefore, check WebCT routinely.**

Reading Matter. The textbook for the course is:

- Barwise, Etchemendy et al.: *Language, Proof and Logic* (CSLI Publications).

This will be available on a CD (as a PDF file) from The Word Bookstore, 469 Milton Street (250 metres from the University Street Gates). **This text is essential. NB.** Cheques and cash only; no credit cards.

Software The CD also contains software essential for many of the exercises. There are 4 software programs which are to be used to practice various aspects of the course, and a bank of files based on these programs. (The disc also contains a PDF copy of the software manual.) The computer-based exercises standardly begin with one of these files, and your solutions to many of the exercises can be checked by submitting them to an on-line marker, which you’ll be encouraged to use. It is also strongly advised: (a) to copy the disc to your hard-drive, and/or onto the hard-drive space made available to you through McGill’s computers; (b) make a careful note of the registration number on the CD, to be kept in a safe place (perhaps also e-mailed to yourself); (c) make a disc-copy of the CD for safe keeping; and (d) arrange for regular computer time if you do not possess your own computer. Please read carefully the section *Essential instructions about homework exercises*, pp. 5–10 of the book. (**IMPORTANT:** Please specify only your **OWN** e-mail address for the ‘Submit’ function.)

Marking and Assessment There will be two assignments, worth 12.5% each; one take-home mid-term test worth 25%; one final exam worth 50%. *Extensions to deadlines set will be granted only in very exceptional circumstances, usually only for medical reasons and with a medical note or other, similar emergencies, appropriately documented.* **Please keep copies of work submitted.**

Policy for Late Work Late work will be penalised at the rate of a third of a full letter grade (or about 5%) per day overdue. Thus an assignment judged to be a B+ (or around 77%) but late one day will be assigned B (or 72%), late two days B– (67%), and so on.

NBNBNB

McGill Policies

1. McGill University values academic integrity. Therefore all students must understand the meaning and consequences of cheating, plagiarism and other NB academic offences under the Code of Student Conduct and Disciplinary Procedures (see www.mcgill.ca/integrity for more information).
2. In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.
3. Students have the right to submit work in French..